88-692

Supreme Court, U.S.
FILED
OCT 26 1988
JOSEPH F. SPANIOL, JR.
CLERK

NO. _____

IN THE
SUPREME COURT OF THE UNITED STATES

TERM COMMENCING OCTOBER 3, 1988

ROGER TEETER AND JENNIFER TEETER
D/B/A SKY'S THE LIMIT,
PETITIONER.

VS.

GRAVITY GUIDANCE, INC.,
RESPONDENT.

PETITION FOR WRIT OF CERTIORARI TO THE
UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

APPENDIX NO. 2 (BOUND SEPARATELY)

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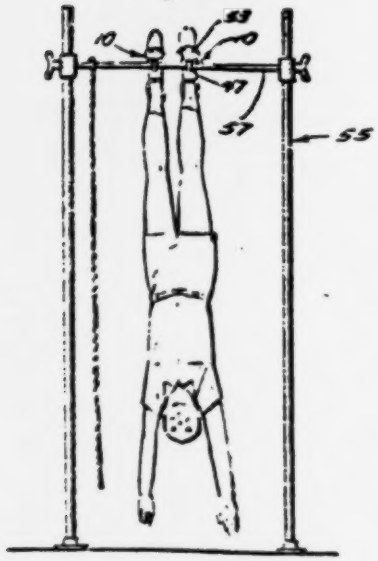
APPENDIX H:
Gibson U.S. patent No. 2,209,310 . . . . . 10 AP

April 30, 1968 R. M. MARTIN 3,380,447
ANKLE DEVICE FOR SUPPORTING AN INDIVIDUAL IN AN INVERTED POSITION
Filed Oct. 19, 1965

Fig. 1



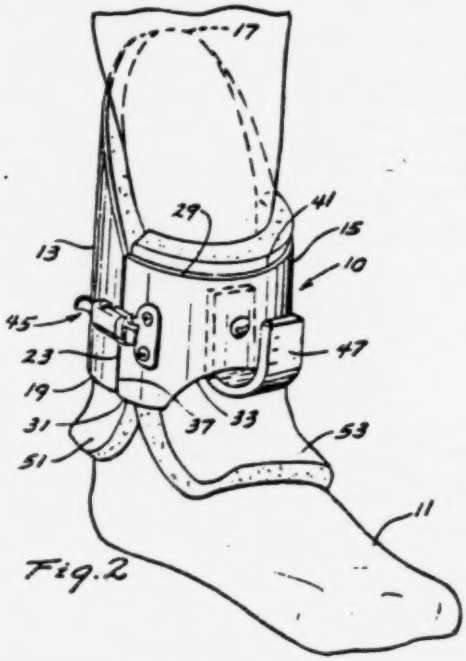


Fig. 2

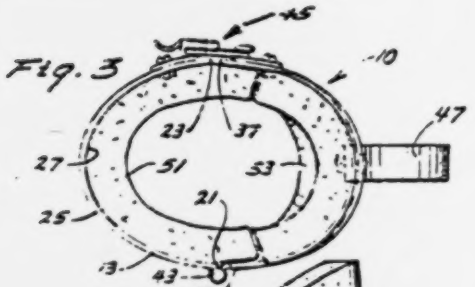


Fig. 3

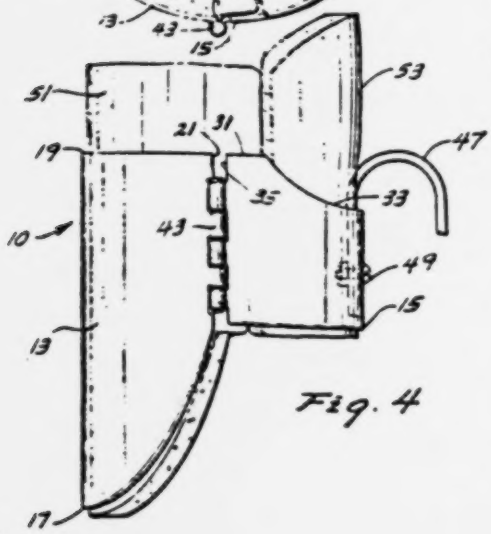


Fig. 4

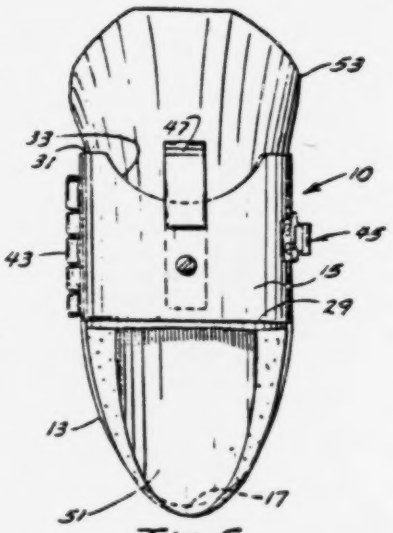


Fig. 5

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United States Patent Office

3,380,447

Patented Apr. 30, 1968

3,380,447

ANKLE DEVICE FOR SUPPORTING AN INDIVIDUAL IN AN INVERTED POSITION

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Filed Oct. 19, 1965, Ser. No. 497,767

9 Claims. (Cl. 128—75)

This invention relates to an ankle device and more particularly to an ankle device for supporting an individual in an inverted position.

The anatomical, physiological and mechanical reasons for supporting an individual in an inverted position from the individual's lower limbs are as follows: (1) lengthen the body; (2) separate the joint spaces, especially the intervertebral joint spaces; (3) to aid in the elimination of vascular and visceral ptosis; (4) to decompress the body; (5) to aid circulatory exchange; and (6) to readjust the lines of stress upon the body. In other words, the inversion of the individual's body serves to reverse the effects of erect posture.

Therefore, it is a principal object of this invention to provide an ankle device for supporting an individual in an inverted position.

A further object of this invention is to provide an ankle device for supporting an individual in an inverted position which is conveniently and quickly attached to the ankle.

A further object of this invention is to provide an ankle device for supporting an individual in an inverted position which is comfortable and safe.

A further object of this invention is to provide an ankle device for supporting an individual in an inverted position so that the full body weight can act as traction and as an elongating load through the long axis of the body.

A further object of this invention is to provide an ankle device for supporting an individual in an inverted position which is economical of manufacture, durable in use and refined in appearance.

These and other objects will be apparent to those skilled in the art.

This invention consists in the construction, arrangements, and combination of the various parts of the device, whereby the objects contemplated are attained as hereinafter more fully set forth, specifically pointed out in the claims, and illustrated in the accompanying drawings in which:

FIG. 1 is a front view illustrating an individual being supported in an inverted position by the ankle devices which are secured to the individual;

FIG. 2 is a front perspective view of the ankle device secured to an individual, the broken lines indicating the configuration of the posterior jaw member;

FIG. 3 is a bottom elevational view of the device;

FIG. 4 is a side elevational view of the device in an inverted position; and

FIG. 5 is a front elevational view of the device in an inverted position.

The numeral 10 generally designates the ankle device of this invention while the numeral 11 generally designates an individual's leg. Ankle device 10 includes jaw members 13 ad 15 hingedly secured together. Jaw member 13 includes a curved upper end 17, lower end 19, opposite ends 21 and 23, exterior surface 25 and interior surface 27.

Jaw member 15 includes an upper end 29, lower end 31 having a cut-away portion 33 formed therein, opposite ends 35 and 37, exterior surface 39 and interior surface 41. As best seen in FIGS. 3–5, ends 21 and 35 of jaw members 13 and 15 respectively are hingedly secured together at 43. As best seen in FIGS. 2 and 3, jaw member 13 and 15 are adapted to be detachably secured together

by means of snap lock means 45. An inverted, substantially U-shaped hook 47 is secured to jaw member 15 by means of bolt assembly 49. Preferably, hook 47, jaw member 13 and jaw member 15 are constructed of a metal material.

A layer of padding 51 is secured to the interior surface 27 of jaw member 13 by suitable adhesive or the like and may be comprised of rubber, leather, etc. As seen in FIG. 2, the lower end of padding 51 extends below the lower end 19 of jaw member 13 and extends slightly above the upper end 17 of jaw member 13. A layer of padding 53 is secured to the interior surface 41 of jaw member 15 by a suitable adhesive or the like and may be comprised of rubber, leather, etc. As best seen in FIG. 2, the lower end of padding 53 extends below the lower end 31 of jaw member 15 and the upper end of padding 53 extends slightly above the upper end 29 of jaw member 15.

The numeral 55 generally designates a horizontal bar assembly having a horizontal bar 57 mounted thereon.

When it is desired to support an individual in an inverted position, it is simply necessary to detachably secure an ankle device 10 to each of the ankles of the individual. The hinged relationship between jaw members 13 and 15 permits the device to be opened to facilitate the insertion of the individual's leg therein. Snap lock means 45 is then locked to prevent the device from inadvertently opening when in use. The individual then simply maneuvers his body on the horizontal bar assembly 55 until hooks 47 on each of the ankle devices extend over the horizontal bar 57 as illustrated in FIG. 1. The individual then hangs in a position as illustrated in FIG. 1 to permit the full body weight of the individual to act as a traction and as an elongated load through the long axis of the body. The layers of padding 51 and 53 prevent the ankle of the individual from coming into contact with any hard or sharp portion of the device to provide the individual with utmost comfort. The individual hangs in the inverted position for a predetermined length of time and then removes himself from the horizontal bar apparatus 57 whereupon the ankle devices are easily and quickly removed from the legs of the individual.

The configuration of jaw member 13 conforms to the posterior side of an individual's lower leg for maximum comfort and support. The curved upper end of jaw member 13 conforms to the configuration of the lower portion of an individual's calf.

The configuration of jaw member 15 conforms to the anterior side of an individual's lower leg for maximum comfort and support. Cut-away portion 33 of jaw member 15 partially receives a portion of the individual's ankle to permit the individual to walk when the device is attached to his ankle. Cut-away portion 33 of jaw member 15 also partially receives a portion of the individual's ankle when the individual is in the inverted position of FIG. 1 for comfort.

Thus it can be seen that the device accomplishes at least all of its stated objectives.

Some changes may be made in the construction and arrangement of my Ankle Device for Supporting an Individual in an Inverted Position without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims, any modified forms of structure or use of mechanical equivalents which may be reasonably included within their scope.

I claim:

1. In a device of the class described,

an inversion boot adapted for attachment to a person's leg including a first jaw member having opposite ends and a second jaw member having opposite ends,

said first jaw member hingedly secured at one of its ends to one end of said second jaw member,

means detachably securing said other end of said first jaw member to said other end of said second jaw member.

and a hook means secured to one of said first and second jaw members.

2. The device of claim 1 wherein said first jaw member is curved across its width and has a curvature complementary to the posterior side of an individual's lower leg.

3. The device of claim 2 wherein said second jaw member is curved across its width and has a curvature complementary to the anterior side of an individual's lower leg.

4. The device of claim 2 wherein said first jaw member has a curved upper end complementary to the lower calf of an individual's leg.

5. The device of claim 3 wherein said second jaw member includes a lower end having a cut-away portion formed therein adapted to partially receive a portion of an individual's ankle.

6. The device of claim 3 wherein said second jaw member includes a front portion and wherein said hook means includes an inverted substantially U-shaped member secured to the front portion of said second jaw member.

7. The device of claim 1 wherein said first and second jaw members each include exterior and interior surfaces and wherein a padding means is secured to the interior surfaces of said first and second jaw members.

8. The device of claim 3 wherein said first and second jaw members each include exterior and interior surfaces, and upper and lower ends and wherein a padding means is secured to the interior surfaces of said first and second jaw members, said padding means on said first jaw member having a length greater than the length of said first jaw member and also having a width greater than the width of said first jaw member; said padding means on said second jaw member having a length greater than the length of said second jaw member.

9. The device of claim 1 wherein said hook means is adapted to be detachably secured to a horizontal bar means when the inversion boot is in an inverted position.

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Dec. 4, 1928. 1,693,810

M. DANIELS ET AL

NEUROPATHIC HEALTH TABLE

Filed Dec. 20, 1928 2 Sheets-Sheet 1

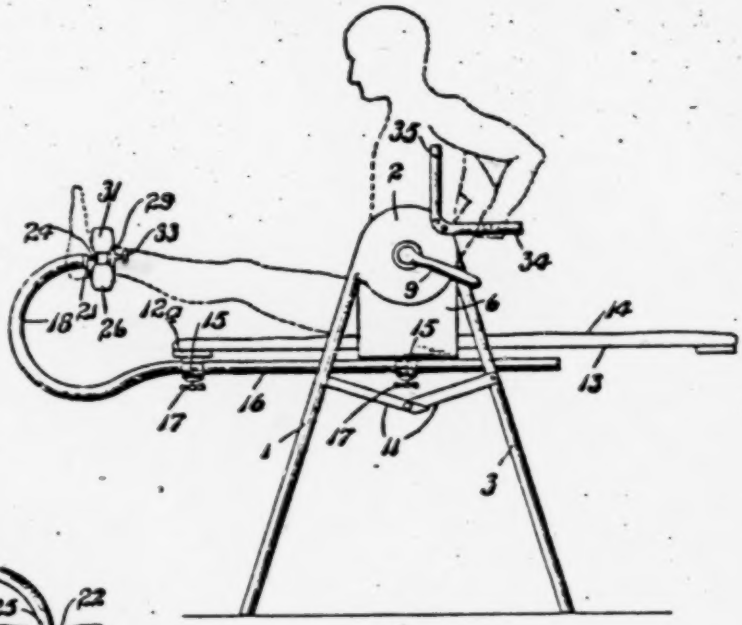

Fig. 1.

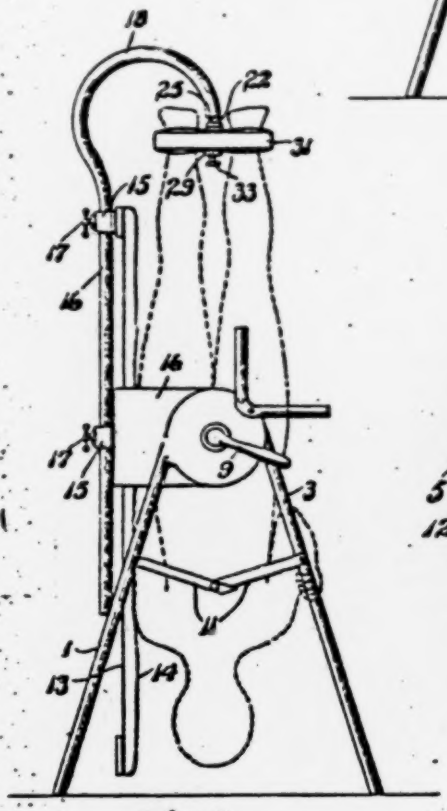

Fig. 2.

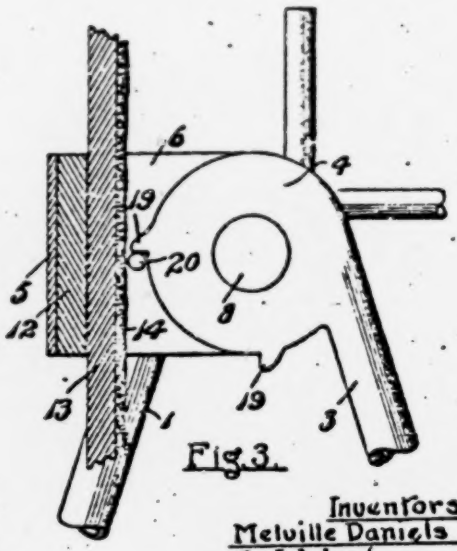

Fig. 3.

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Dec. 4, 1928. 1,693,810

M. DANIELS ET AL

NEUROPATHIC HEALTH TABLE

Filed Dec. 20, 1928 2 Sheets-Sheet 2

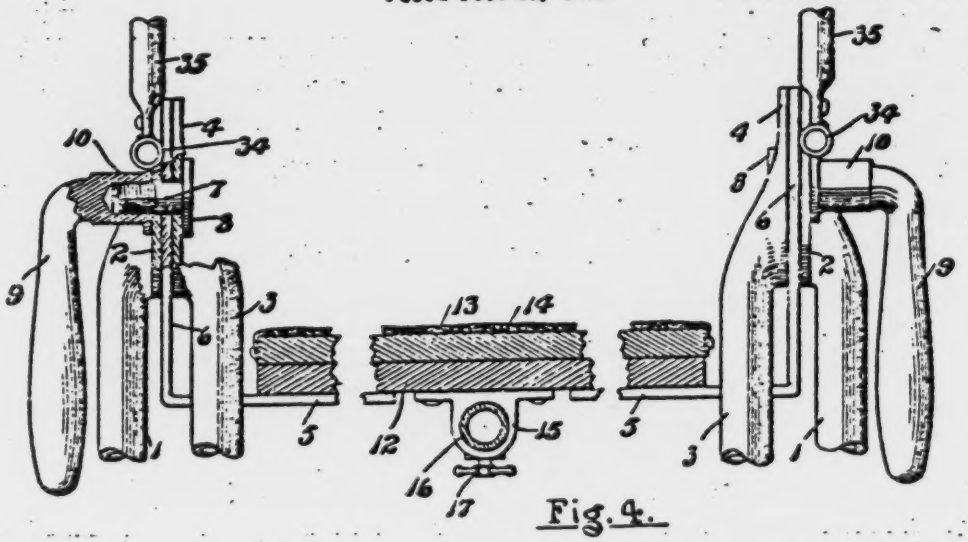

Fig. 4.

Fig. 5.

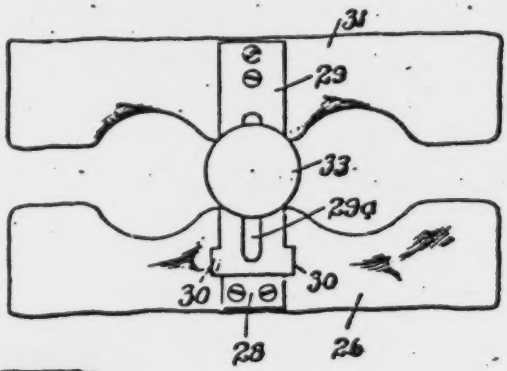

Fig. 6.

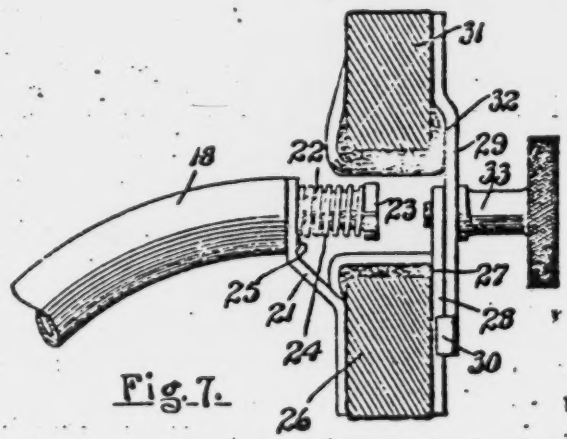

Fig. 7.

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Patented Dec. 4, 1923. 1,693,810

UNITED STATES PATENT OFFICE.

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NEUROPATHIC HEALTH TABLE.

Application filed December 20, 1926. Serial No. 158,022.

This invention relates to a table adapted to be used in the treatment of neuropathic ailments wherein the patient lying on the table may manipulate it so as to change the position and in this manner dispose his (or her) body so that the force of gravity may aid in restoring misplaced organs to proper position and relieve pressure of such misplaced organs which pressure may produce a neuropathic condition. We have found that by use of a table of this kind the patient may give self treatment and cure or palliate many disorders to which the body is subject.

It is a primary object and purpose of the present invention to provide a table of the character outlined on which the patient may lie and which is adjustable on the part of the patient to different angular positions and on which the patient may turn to different positions and still be held against accident. Various novel constructions are supplied for the attainments of these ends as well as others not at this time specifically stated but which will appear from the following description and the accompanying drawings, in which,

Fig. 1 is a side elevation of the table of our invention.

Fig. 2 is a similar elevation, the table having been tilted from a horizontal to a vertical position.

Fig. 3 is a fragmentary enlarged vertical section through the table, illustrating the manner in which it is mounted for movement about a horizontal axis and further illustrating the limit stops used in connection therewith.

Fig. 4 is a transverse vertical section through the table construction the plane of section being substantially through the pivotal mounting therefor.

Fig. 5 is a fragmentary section showing the mechanisms used for rotatably mounting the ankles holding clamp.

Fig. 6 is an elevation of said clamp, and

Fig. 7 is a vertical transverse section therethrough.

Like reference characters refer to like parts in the different figures of the drawings.

In the construction of the device, supporting standards 1 inclined somewhat to the vertical are used at their upper ends being equipped each with an enlarged circular disk-like head 2. Associated with each of the standards 1 is a similar standard 3 which is likewise equipped at its upper end with a disk-like head 4. The standards 1 and 3 preferably are of tubular stock, though not necessarily so, and the heads 2 and 4 thereof are adapted to be connected together. Two pairs of standards are used one at each side of the table and are spaced apart somewhat farther than the width of the table. The table is attached to brackets of metal, each including a horizontal section 5 and a vertical section 6. The horizontal sections 5 extend toward each other and the vertical sections 6 pass between the heads 2 and 4 at the upper ends of the standards 1 and 3 as best shown in Fig. 4. A screw 7 having a head 8 passes through the heads 2 and 4 and the vertical sections 6, the heads 8 of the screws bearing against the heads 4 at the upper ends of standards 3, and the screw being connected to a handle 9 from which a socket portion 10 is turned at right angles, it being interiorly bored and threaded to receive the end of a screw 7. This is fully shown in Fig. 4 and it is evident that by turning the handle 9 the parts, including the heads at the upper ends of the standards and the vertical sections 6 of the table supporting brackets may be securely clamped together; and that on releasing the clamps thus provided the table which is supported on the inwardly extending sections 5 of the supporting brackets may be turned to different positions about the horizontal axis of the screws 7 which serve as pivots about which the table may turn. The supporting standards 1 and 3 at each side of the construction are limited in the extent that they may separate by links such as 11 in Fig. 1.

The table is spaced a short distance above the horizontal sections 5 by means of a cross bar 12 which is secured to said sections. The table 13 lies above and is fixed to said bar 12 and at its upper side and edges is covered with any suitable padding, indicated at 14.

On the under side of the bar 12 and also on the under side of a second bar 12^a secured to the under side of the table near one end thereof, are sleeves 15 mounted in alignment with each other through which a tubular rod 16

may pass, it being adjustable in said sleeves and held in any position to which adjusted by set screws such as indicated at 17. Beyond the end of the table 13 the tube is curved upwardly and thence back toward said table, as best shown in Figs. 1 and 2, making a curved section 18, as shown.

The table with the attached tubular rod 16 is limited in its movements to an arc of substantially 90 degrees. On the heads 4 at the upper ends of standards 3 two stationary stops 19 are provided (see Fig. 3) which are located 90 degrees apart and between which stop pins 20 on the vertical sections 5 of the table supporting brackets may move. This limits the table to a swinging movement between the horizontal position shown in Fig. 1 and the vertical position shown in Figs. 2 and 3.

At the end of the curved section 18 of the tubular rod 16 a bracket 21 of metal is located. It is bent downwardly and inwardly at an incline a short distance below where it is attached to the tube 18 (see Fig. 7) and then extends vertically downward. The upper end of the bracket has an opening through which a pin 22 freely passes, the pin being permanently secured to the end of the tube 18 and at its free end provided with a head 23. A coiled spring 24 under compression is located around the pin 22 between its head 23 and the bracket 21, the normal effect of which is to force the bracket against the end of the curved tubular section 18, as shown in Fig. 7. A short locating pin 25 projects from the end of the tube 18 and passes through an opening in the bracket 21 when the table and the tubular rod 16 are in horizontal position.

A clamping bar 26 is rigidly secured to the downwardly extending outer end of bracket 21 and at its upper side is covered with suitable padding indicated at 27. On the inner side of the clamping member 26, a bar 28 is permanently secured the same extending above the upper side of the bar 26. A second bar 29 having a vertical slot 29ª therein is adjustably mounted on the bar 28, its lower end at each side edge being equipped with lips 30 which pass alongside each edge of the bar 28. A second clamping bar 31 covered with suitable padding 32 is permanently secured to the upper end of the adjustable bar 29. In order to fix the two clamping bars 26 and 31 securely with respect to each other a clamping screw 33 having an enlarged head passes through the slot 29ª and into a threaded opening in the bar 28 and has a shoulder which clamps against the bar 29. It is evident that in this manner the bars 26 and 31 may be adjusted back and forth with respect to each other and may be held in any position to which adjusted. When the patient lies on the table the ankle portions of the legs may be placed in suitable recesses in the upper side of the bar 26 then the bar 31 lowered snugly into engaging position with the legs of the patient and the clamping screw 33 then tightened.

At each side end near the upper edge portion of the heads 2 of the supporting standards 1 of the device, hand holds are permanently secured and lie at right angles to each other as indicated at 34 and 35. In practice these are made from a length of tube flattened between its ends where the attachment is made to heads 2 and bent at right angles at the flattened portion so as to make the vertical hand holds 35 and the horizontal hand holds 34.

The patient having been placed on the table or having placed himself (or herself) thereon and clamped the legs within the ankle clamp may then loosen the handles 9 and turn the table to different positions, anywhere between the horizontal position shown in Fig. 1, and the vertical position shown in Fig. 2. By reason of the structure and the limit stops which are provided the swing of the table can only be so as to lower the head of the patient and at any point between the horizontal and vertical position of the table this movement may be stopped. By reason of the weight of the patient which is carried wholly or partly by the ankle clamping bars, spring 24 is compressed, the bracket 21 is disengaged from the pin 25 and the leg or ankle clamps may be turned about the axis of the pin 22. This permits the patient to turn to different positions on the table. There are many positions in which certain misplacement of organs will be rectified and nerves relieved from pressure and the patient may turn to the desired position and secure such relief with an eventual replacement of the organ to natural position. With this apparatus various attachments may be used on the table for supporting the head or other portions of the body but these are not shown or described in the present application.

The table is very practical and serviceable and has proved particularly valuable in treatment of neuropathic disorders. It is simple to operate, adjustable for different heights of persons using it and can be used in the home without the necessity of an attending physician or nurse. The invention is defined in the appended claims and is to be considered comprehensive of all forms of structure coming within their scope.

With reference to the ankle clamping device which has been definitely disclosed and described as such, it is pointed out that any equivalent device adapted to clamp the feet or in fact any part of the lower extremities of a person may be substituted as a mechanical and actual equivalent. Wherever the device is referred to as an ankle clamping means such designation is to be understood in this broader sense.

We claim:

1. In a construction of the class described, spaced apart vertical supports, brackets pivotally mounted one at the upper end of each support to turn about a horizontal axis, each of said brackets including a horizontal section, said horizontal sections of the brackets extending toward each other, a table carried by and between said horizontal sections of the brackets, a member located below, lengthwise of and adjustable longitudinally with respect to the table, said member at one end extending beyond the adjacent end of the table and thence bent upwardly and back toward the table and a legs holding clamp mounted at the outer end of the said member.

2. In a construction of the class described, spaced apart vertical supports, a table disposed between said supports and located a distance below the upper ends thereof, means for mounting said table for turning movement on the supports about a horizontal axis located above the table, a rod disposed below and lengthwise of the table, means for adjustably mounting said rod on the table, one end of the rod extending beyond the adjacent end of the table and thence being bent upwardly and back, and a legs holding clamp connected to the outer end of said rod substantially as described.

3. In a construction of the class described, spaced apart vertical supports, a table located between said supports and mounted thereon for turning movement about a horizontal axis, means for limiting the movement of said table between two positions in one of which the table is horizontal and the other vertical, a member located lengthwise of and below the table, means for mounting said member on the table whereby it may be longitudinally adjusted with respect to the table, said member at one end extending beyond the adjacent end of the table and being thence bent upwardly and back toward the table, and a legs holding clamp pivotally mounted on the outer end of said member so that it may be turned to any desired position.

4. A construction containing the elements in combination defined in claim 3, combined with means for normally holding said legs holding clamp against turning movement with respect to the member on which it is mounted.

5. In a construction of the class described, spaced apart vertical supports, a table located between said supports, means for mounting the table on said supports for turning movement about a horizontal axis, a rod located below and adjustably mounted on the table for longitudinal adjustment, one end of the rod extending beyond the adjacent end of the table thence bent upwardly and back toward the end of the table, a headed pin attached to and projecting from said end of the rod, a bracket rotatably mounted on and depending from said pin, a coiled spring around the pin between said bracket and the head of the pin, a second smaller pin projecting from the end of the rod and adapted to pass through an opening in said bracket and a legs holding clamp carried by said bracket.

6. In a construction of the class described, spaced apart vertical supports having heads at their upper ends, supporting brackets each including a vertical section and a horizontal section pivotally mounted to turn on a horizontal axis, one of said brackets being pivotally connected to each of said supports at their upper ends whereby the vertical sections of the brackets extend downwardly from the pivots and the horizontal sections of the brackets extend toward each other, stop lugs located substantially 90 degrees apart projecting from a head of the support, a complementary stop pin extending inwardly from the vertical section of a bracket between said stop lugs, a table attached to, carried by and extending between the horizontal sections of said brackets, and a legs holding clamp connected with said table adjacent one end thereof substantially as described.

7. In a construction of the class described, spaced apart vertical supports each comprising two tubular standards converging adjacent their upper ends and each formed with circular heads, a bracket of flat metal having a vertical section located between the heads of each pair of standards, a headed and screw threaded pivot screw passing through said heads and vertical section of the bracket, a handle formed at one end with a socket located at right angles to the handle, said socket being screwed on to the threaded end of its pivot screw, whereby said heads and brackets may be clamped together or released sufficient to permit turning movement of the brackets, a table located between and connected to said brackets and means carried by the table for clamping the legs of a patient lying upon said table.

8. A construction containing the elements in combination defined in claim 7, combined with hand holds secured at the upper ends of each vertical support, each of said hand holds including a horizontal rearwardly extending member and a vertical member located at right angles to the horizontal member.

9. In a construction of the class described, a table mounted to turn about a horizontal axis from horizontal to vertical position, means associated with the table and moving therewith for clamping the ankles of a person, said means being freely rotatable relative to the table.

10. In a construction of the class described, a table mounted for movement about a horizontal axis, means associated with the table and freely rotatable relative thereto for

clamping the ankles of a person, and releasable means for holding said ankle clamping means non-rotative.

11. In a construction of the class described, a table mounted for movement about a horizontal axis, means associated with the table and rotatable relative thereto for clamping the ankles of a person, and releasable means for holding said ankle clamping means non-rotative, said releasable means being released by weight suspended from the ankle clamping means.

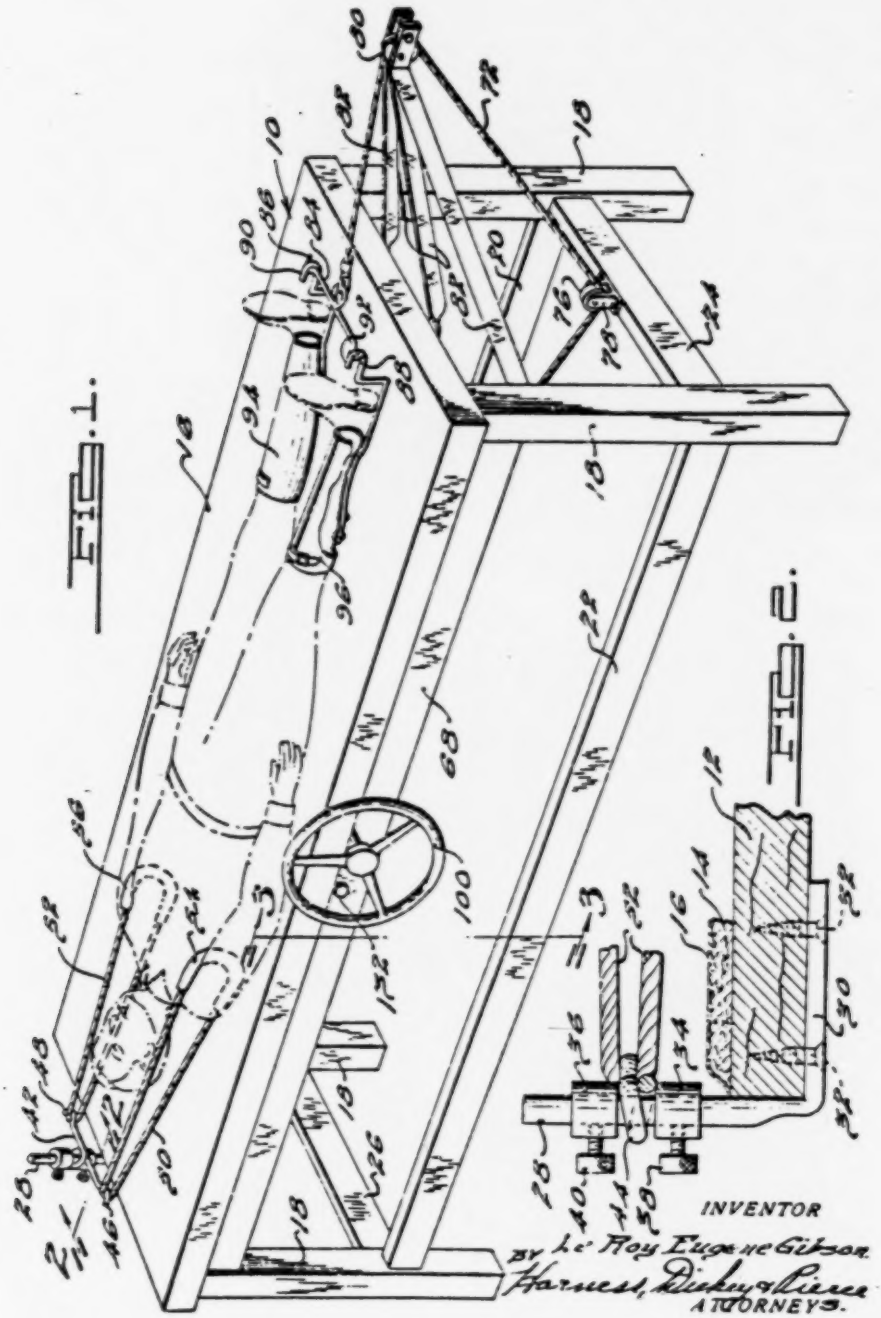
In testimony whereof we affix our signatures.

MELVILLE DANIELS.
A. J. WOOD.

July 30, 1940. LE ROY E. GIBSON 2,209,310

THERAPEUTIC TABLE

Filed Jan. 30, 1939 2 Sheets-Sheet 1



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July 30, 1940. LE ROY E. GIBSON 2,209,310

THERAPEUTIC TABLE

Filed Jan. 30, 1939 2 Sheets-Sheet 2

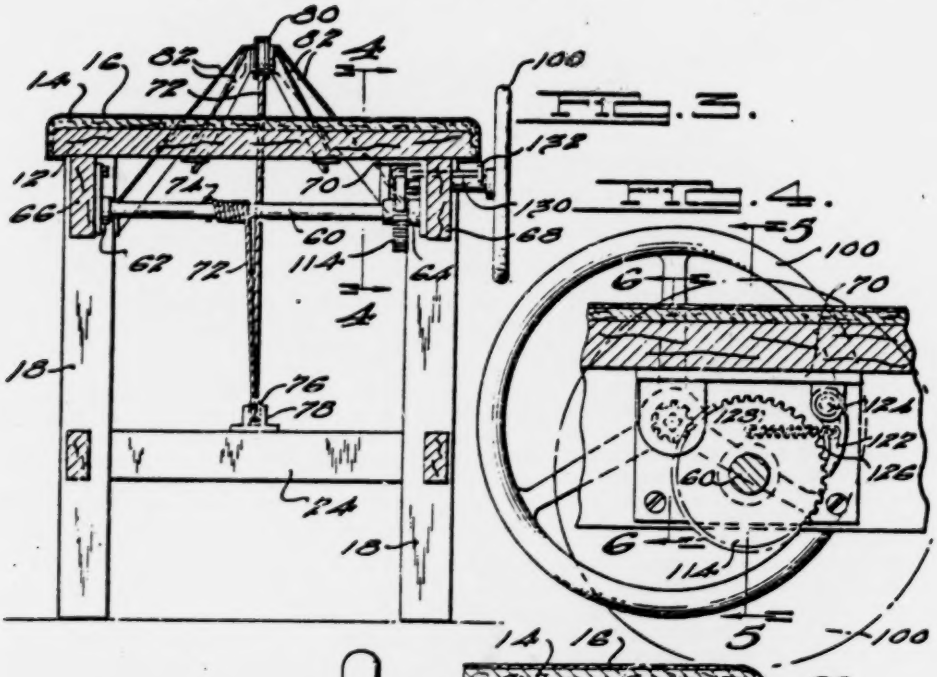

FIG. 3.

FIG. 4.

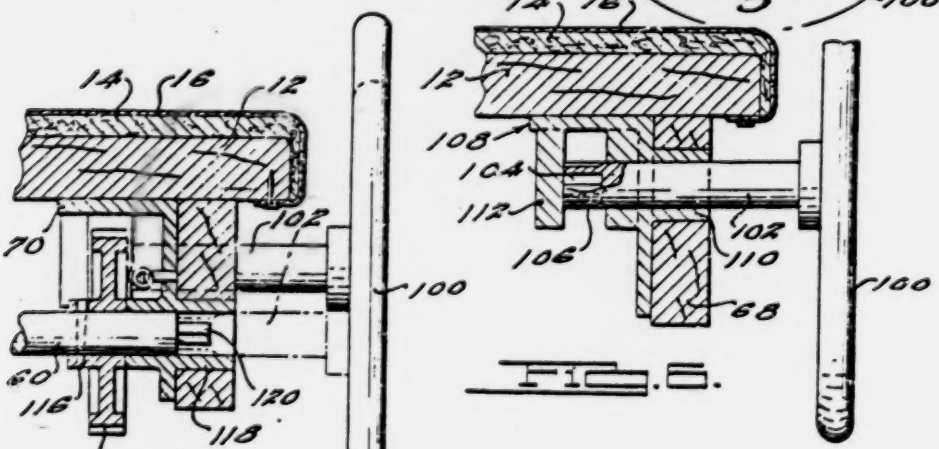

FIG. 6.

FIG. 5.

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Patented July 30, 1940 2,209,310

UNITED STATES PATENT OFFICE

2,209,310

THERAPEUTIC TABLE

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1 Claim. (Cl. 128—71)

This invention relates to therapeutic tables.

The main objects of this invention are to provide an improved therapeutic table for stretching a patient; to provide a treatment table on which a patient may lie down, relax, and while in such relaxed position have the body stretched, particularly the spine; to provide a therapeutic table which is simple in construction and which may be readily manipulated by the operator; and which is at all times under the control of the operator or of the patient himself while in a reclined position.

An illustrative embodiment of this invention is shown in the accompanying drawings, in which:

Fig. 1 is a view in perspective of the improved therapeutic table showing a patient in position thereon receiving a treatment.

Fig. 2 is an enlarged fragmentary sectional view taken on the line 2—2 of Fig. 1, looking in the direction indicated by the arrows.

Fig. 3 is a sectional view taken along the line 3—3 of Fig. 1, looking in the direction indicated by the arrows.

Fig. 4 is an enlarged, fragmentary view, partly in section and partly in elevation, taken along the line 4—4 of Fig. 3.

Fig. 5 is a sectional view taken along the line 5—5 of Fig. 4, looking in the direction indicated by the arrows, and

Fig. 6 is a sectional view taken along the line 6—6 of Fig. 4, looking in the direction indicated by the arrows.

As a result of many years of experience and substantiated by case records of many hundreds of patients, it is evident that disorders of the internal organs are in nearly every instance caused from pressure on the nerves which branch out between the various vertebrae of the spinal column. As substantiated by case records, such disorders may be quickly, and in some instances practically instantaneously, cured by stretching the vertebrae of the spine so as to relieve the pressure on the communicating nerves.

In the construction shown in the drawings, the table comprises a rectangular, horizontally disposed, table top member generally designated 10 which may be formed of a relatively heavy and substantial board 12 having a pad 14 thereon covered by canvas 16, or other suitable cloth.

The top 10 is supported adjacent its four corners by vertically disposed legs 18 which are connected by horizontally disposed side braces 20 and 22, and similarly disposed end braces 24 and 26, all of which are in spaced relation to the lower end of the legs so as to lend strength and rigidity to the table structure.

One end of the table top, at the medial point thereof, is provided with a vertically disposed metal post 28, the lower end of which is turned at right angles, as shown at 30, to fit underneath the board 12 to which it is rigidly secured by screws 32. The post 28 is provided with a pair of slidable set collars 34 and 36 which may be adjustably positioned on the post by means of knurled set screws 38 and 40, respectively.

The collars 34 and 36 adjustably position and retain a horizontally disposed equalizing bar 42, the middle part of which is provided with an eye or ring 44, formed by bending the bar in the form of a closed loop or circle with the free ends extending in opposite directions in substantial alignment with each other. The outer ends of the equalizing bar 42 are bent to provide hooks 46 and 48 which are adapted to receive closed loops of rope or cord 50 and 52, respectively. The loops 50 and 52 are preferably provided with padded portions 54 and 56, respectively, which may be placed underneath the arms of a patient lying on the table top, as shown in Fig. 1 of the drawings. The loops 50 and 52 are detachably attached to the equalizing bar 42 which in turn is rigidly held by the post 28 and thus provides a firm and secure anchor for the upper part of the patient's body.

Means are provided for exerting a positive pull on the patient's lower extremities and comprise a geared mechanism having a main shaft 60 horizontally disposed transversely of the table in spaced relation under the top thereof with the opposite ends of the shaft journaled in sockets 62 and 64 which are secured to the inner sides of longitudinally extending, edgewise disposed, wood brace members 66 and 68, respectively. The socket 64 is integrally formed as part of an angle bracket having a vertically disposed portion attached to the brace 68 and a horizontally disposed leg 70 which is attached to the underside of the table top board 12.

The shaft 60 is adapted to have one end of a cable 72, preferably of stranded wire, anchored thereto, as shown at 74, the free end of which passes around a guide pulley 76 journaled in a bracket 78 which is attached to the upper edge of the end brace 24. From the guide pulley 76, the cable 72 extends upwardly and outwardly to pass around a guide pulley 80 which is journaled between the outer converging ends of a plurality of brace members 82 which are attached to that end of the table, two of the brace members being

attached to the undersides of the table top and the other two to the adjacent legs. The brace members 82 extend outwardly and upwardly so that the guide pulley 88 is vertically spaced above the horizontal plane of the table top, as shown most clearly in Fig. 3 of the drawings.

From the guide pulley 88, the cable 72 extend horizontally toward the table top and is attached to an equalizing bar 84 which is of the same general construction as the equalizing bar 42. Hooked ends 86 and 88 of the equalizing bar 84 are adapted to engage hooked ends 90 and 92 of metal braces which are riveted or otherwise suitably secured to leg straps or clamps 94 and 96, respectively, which are adapted to be strapped or otherwise suitably secured to the calves of the patient's legs.

Means are provided for rotating the shaft 68 in both fast and slow motion, and comprises a hand wheel 100 having a shaft 102 rigidly keyed thereto at one end thereof, the other end of said shaft having an axially extending squared socket 104 formed therein, and having gear teeth 106 exteriorly formed thereon. The bracket in which the socket 64 and horizontal flange 70 are integrally formed is generally designated 108 in Fig. 6 of the drawings, and as shown therein is provided with a sleeve portion 110 adapted to pass through an opening formed in the side brace 68 and having a bore therethrough of a size to serve as a journal bearing for the shaft 102. A depending flange 112 is formed on the horizontally extending flange 70 in position to have the inner end of the shaft 102 abut thereagainst and thereby hold the gear teeth 106 in correct position to mesh with a gear wheel 114 non-rotatably secured to the shaft 68 by a pin 116 which extends through an axially extending sleeve of the gear 114 and passes diametrically through the shaft 68.

The gear wheel 114 serves as a set collar to hold the opposite end of the shaft 68 in its socket 62, and the bracket 108 is also provided with a horizontally extending sleeve portion 118 which serves as a journal bearing for the shaft 68 which extends substantially halfway therethrough. This end of the shaft 68 terminates in a square axially extending lug 120 which is adapted to have easy sliding fit in the socket 104 which is formed in the end of the shaft 102. The bore through the sleeve 118 is of uniform diameter and the shafts 102 and 68 are of substantially the same outside diameter so that the end of the shaft 102 having the socket 104 therein may be readily slipped into the bore of the sleeve 118 and fit over the squared end of the shaft 68, as shown in dotted outline in Fig. 5.

Means are provided for preventing rotation of the shaft 68 in one direction while permitting rotation thereof in the opposite direction and comprise a pawl 122 journaled at 124 on a depending lug integrally formed on the flange 70 in position so that the free end of the pawl rides on the face of the gear teeth of gear 114. A helical tension spring 126 has one end secured to the pawl 122 and its other end anchored to a hroizontally extending pin 128 mounted in the vertical flange of bracket 108.

The pawl 122 is rigidly mounted on a horizontally disposed shaft 130 which extends through and is journaled in the bracket 108 and protrudes beyond the outer side of the side brace 68 where it is provided with a handle 132 by which it may be swung away from the gear teeth against the action of the spring 126.

In the operation of this device the patient is placed upon the table in a comfortable position and the arm loops adjusted underneath the arm pits with the ends of the loops secured over the hooked ends 46 and 48 of equalizing bar 42. The height of the equalizing bar 42 is adjusted on its supporting bar 48 by means of the set collars 34 and 36 so as to be in substantially the same horizontal plane as the patient's arms so as to exert a straight pull thereon. The leg clamps 94 and 96 are secured to the calves of the patient's legs and equalizing bar 84, which is attached to the cable 72, is then hooked to the ends 90 and 92 of the leg clamps.

The hand wheel 100 with its shaft 102 is then placed in the position shown in dotted lines in Fig. 5 of the drawings with the socket 104, formed in the end of the shaft 102, fitting over the squared end 120 of the shaft 68. The hand wheel is then rotated to take up all slack in the cable 72 and place an initial tension on all of the parts as well as the patient's body.

The hand wheel and attached shaft is then removed and slipped into the bearing formed in sleeve 110 with the teeth 106 on the inner end of the shaft 102 in mesh with the teeth of gear 114. The hand wheel 100 is again rotated in the appropriate direction to wind up the cable 72 on the shaft 68, and this is continued until the patient's body and particularly the vertebra thereof is stretched to a sufficient point.

By having the hand wheel and main shaft 68 located medially of the table, it is both possible and convenient for a patient lying upon the table to manipulate the hand wheel himself, and thereby gauge the amount of stretching to which his body is subjected. The pawl 122 being normally spring pressed to ride upon the teeth of the gear 114 gives an audible indication of very small increments of stretch, and thereby serves as a guide to the operator or to a patient who is operating the hand wheel himself. Stretching of this character will not only separate the vertebrae from each other to relieve tension, but at the same time will align the vertebrae so that sidewise pressure on the spinal cord is relieved.

Although but one embodiment of the invention has been herein shown and described, it will be understood that further details of the construction shown may be altered or omitted without departing from the spirit of the invention, as defined by the following claim.

What is claimed is:

In a therapeutic table for stretching a patient and having means for clamping one extremity of the patient to the table, a cable having one end adapted to be detachably attached to the other extremity of the patient, the other end of said cable being anchored to a shaft, journals for said shaft on said table, a gear non-rotatably mounted on said shaft, a journal bearing bracket for one end of said shaft, said shaft gear being adjacent thereto and abutting against said journal bearing bracket, such end of such shaft terminating in an axially extending coupling, a hand wheel, a shaft rigid to said hand wheel at one end thereof, the other end of said hand wheel shaft having a complementary coupling for attachment to the end of said cable winding shaft, and pinion teeth formed on said hand wheel shaft adapted to mesh with said cable winding shaft gear, and a journal bearing formed in said bracket for receiving said hand wheel shaft and for holding said pinion teeth in mesh with said shaft gear.

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